

MANAGEMENT UNIT 18 - OQUIRRH-STANSBURY

Boundary Description

Salt Lake, Utah, and Tooele counties - Boundary begins at the junction of I-15 and I-80 in Salt Lake City; south on I-15 to SR-73; west on SR-73 to SR-36; south on SR-36 to the Pony Express road located just south of Faust; west on this road to the Skull Valley-Dugway-Timpie road; north on this road to I-80 at Rowley Junction; east on I-80 to I-15 and beginning point.

Unit Description

This management unit includes the Stansbury, Oquirrh, and Onaqui Mountains and is divided into two subunits. Big game activity within the unit centers around the Oquirrh Mountains and the Stansbury Mountains with their southern foothills. These two mountain ranges are both fairly isolated from surrounding ranges by valleys and are the only lands suitable for big game habitat.

The winter range for the Oquirrh Mountains is limited to land below 7,000 feet (2,134 m) and makes up approximately 48% of the land classified as suitable for big game. The remainder is located at an elevation range of 7,000 to 7,500 feet (2,134 to 2,289 m) and is classified as summer range. During severe winters, the available winter habitat is reduced to almost half this area; a particularly major management problem for the Oquirrh Mountains. Another major concern is that 63% of the summer and 45% of winter range are under private ownership. The area has a history of heavy grazing (almost year round) by cattle, sheep, wild horses, and goats. Although current use is less intense than in the past, the winter range condition has continued to decline.

Air pollution from smelters have created management difficulties for the area surrounding the northern Oquirrh Mountains. Historically, pollution eliminated almost all vegetation within drainages adjacent to the smelter (personal communication with Ann Neville, Kennecott biologist resource specialist, 2007). Accumulations of mine tailings in Bingham and Mercur Canyons have covered significant acreages on both summer and winter ranges. Access to studies on private land also pose a difficulty in this unit. Kennecott Copper Corporation, the largest single land owner, allows very limited hunting access for elk and deer hunting.

The Stansbury Mountains winter range is located below 6,800 feet (2,073 m) and makes up approximately 55% of the big game range. Summer range is limited to about 6,800 to 7,000 feet (2,073 to 2,134 m). The proportion of private lands on this big game habitat are 6% of the summer and 14% of the winter ranges. Although the overall winter range condition is generally more satisfactory than that of the Oquirrh Mountains, there is a high abundance invasive weeds restricting the reproduction and establishment of browse species.

Big Game Management Objectives

The estimated winter mule deer herd populations for the unit were 8,850 deer in 2002, 9,100 in 2003, 9,400 in 2004, and 10,250 in 2005 with an average of 12.3 bucks per 100 does from 2003 to 2005. The post-season fawn:doe ratio has averaged 61:100 since 1999. The current management objective for deer is a target herd winter population of 10,600 with a composition of 15 to 20 bucks per 100 does (Hersey and McLaughlin 2005).

The estimated winter elk herd populations in the entire unit from 2002 to 2004 were 700 elk and 740 in 2005. The current management objective for elk is a target herd winter population of 800 (Hersey and McLaughlin 2006).

MANAGEMENT SUBUNIT 18B - OQUIRRH-STANSBURY, SOUTH

Subunit Boundary Description

Salt Lake, Utah, and Tooele counties - Boundary begins at the junction of I-15 and I-80 in Salt Lake City; south on I-15 to SR-73; west on SR-73 to SR-36; north on SR-36 to Middle Canyon Road; east on Middle Canyon Road to the Tooele-Salt Lake County boundary; north along the Tooele-Salt Lake County boundary (Oquirrh Mountains ridge line) to Lake Point and I-80; east on I-80 to I-15 and beginning point.

Range Trend Studies

Ten studies were originally established in the subunit in 1983. Since 1983, a total of 20 have been established, but 13 have been suspended over the years. In 2007, seven studies were read.

SUMMARY

WILDLIFE MANAGEMENT SUBUNIT 18B - OQUIRRH-STANSBURY SOUTH

Community Types

Seven trend studies were resampled in the summer of 2007, two were dominated by mountain big sagebrush, two by a hybrid of mountain big sagebrush and Wyoming big sagebrush (classified as mountain big sagebrush), one by black sagebrush, one by perennial exotic grasses, and one by perennial native grasses (summer range).

Precipitation

Vegetation trends are dependent upon annual and spring precipitation patterns. Precipitation data from this herd unit was compiled from the Tooele, Johnson Pass, and Fairfield weather stations (Figures 1 and 2).

The unit annual precipitation average was below 75% of normal (drought conditions) in 1988, 1989, and 2002 and below normal in 1990, 1992, 1999, 2001, and 2003 (Figure 1). Spring precipitation was below 75% of normal 1989, 1990, 1992, 2000, and 2007 and was below normal in 1997, 2001, 2002, 2003, and 2004 (Figure 2). Fall precipitation was near or below 50% of normal in 1995, 1999, 2003, and 2005 (Figure 2). Spring precipitation is essential for the recruitment of browse seedlings and the establishment of native cool season perennial grasses and forbs.

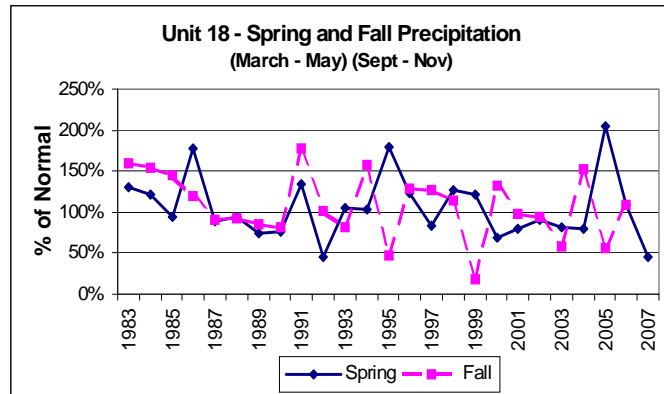


Figure 2. Spring and fall precipitation for unit 18. Precipitation data was collected at the Tooele, Johnson Pass, and Fairfield weather stations (Utah Climate Summaries 2007).

population in 1997 to approximately 31% in 2002 and 2007 (Figure 5). Mountain big sagebrush average cover for the subunit increased from 5% in 1997 to 9% in 2002 and 2007 (Figure 6). The browse trends of Manning Canyon (18B-3) and Three O'Clock (18B-34) were down and slightly down for Settlement Canyon Reservoir (18B-3). These studies, with the exception of South of Soldier Canyon (18B-6) which remained stable, constituted all of the mountain big sagebrush studies in the herd unit. The sagebrush defoliator moth was sampled at Manning Canyon and South of Soldier Canyon. It infested 7% of the sagebrush population at South of Soldier Canyon and 19% of the Manning Canyon population. Insects infested the sagebrush of Three O'Clock, but

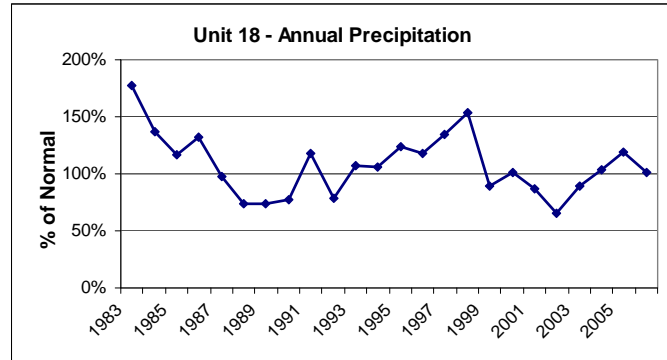


Figure 1. Annual precipitation for the entire unit 18. Precipitation data was collected at the Tooele, Johnson Pass, and Fairfield weather stations (Utah Climate Summaries 2007).

Browse

The average browse trend had changed little until 2002, but decreased substantially from 2002 to 2007 (Figure 3). Black sagebrush changes were only a reflection of the changes of Big Dip Gulch (18B-5), which was the only black sagebrush study sampled in 2007. The average density of mountain big sagebrush decreased 22% from 2002 to 2007 (Figure 4). Sagebrush decadence increased from 20% of the

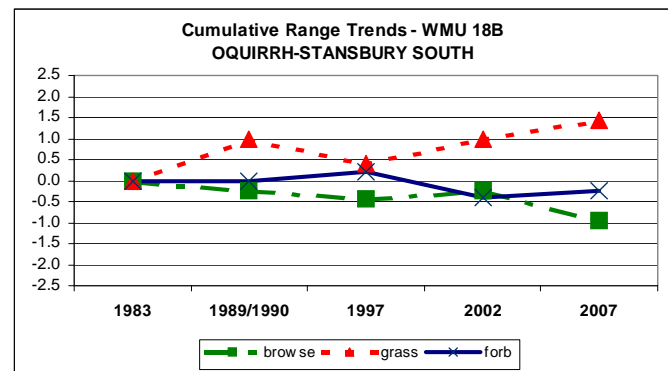


Figure 3. Cumulative range trends for subunit 18B, Oquirrh-Stansbury South.

the species of insect was not noted. No browse trends improved from 2002 to 2007.

Grass

Grass trends have increased steadily since 1997 (Figure 3). Perennial grass cover and nested frequency increased from 2002 to 2007 and cheatgrass cover and nested frequency changed little (Figures 7 and 8). Perennial grass cover increased from 14% to 18% and cheatgrass cover only increased from 1% to 2%. Bulbous bluegrass was only sampled in one study in 1997, but was sampled in four studies in 2002 and 2007. The subunit average of bulbous bluegrass cover decreased from 8% to 6%, although the nested frequency changed little (Figures 7 and 8). It increased in nested frequency and cover (from 19% to 22%) at Settlement Canyon Reservoir (18B-35), but decreased in both nested frequency and cover (from 36% to 19%) at Three O'Clock (18B-34). Both of these studies have low cheatgrass cover and nested frequencies, as though the bulbous bluegrass is controlling the cheatgrass. Stewart and Hull (1949) reported that bulbous bluegrass seed and bulbils distributed in established cheatgrass stands could reduce cheatgrass densities.

Forbs

The forb trends declined from 1997 to 2002 and slightly increased from 2002 to 2007 (Figure 3). The perennial forb average cover of the subunit did not change from 1997 to 2002, but increased from 5% in 2002 to 8% in 2007 (Figure 7). The nested frequency of perennial forbs has increased steadily since 1997 (Figure 8). Storksbill (*Erodium cicutarium*) and bur buttercup (*Ranunculus testiculatus*) showed significant increases in nested frequency in 2007 at the lower elevation studies Manning Canyon (18B-3), Big Dip Gulch (18B-5), and South of Soldier Canyon (18B-6). Both of these undesirable species have been shown to outcompete native species in rangelands (Buchanan et al. 1978; Kimball and Schiffman 2003; Young et al. 1992).

Desirable Components Index

The subunit Desirable Components Index (DCI) average for low potential studies have remained fair (Figure 9). The mid-level potential studies decreased from fair in 1997 to poor in 2002, and back to fair in 2007 (Figure 9). The decrease in the DCI was due to a decrease in perennial grass cover in 2002, a product of the drought in 2001 and 2002. The good perennial grass cover across the unit buffers the DCI scores from larger changes.

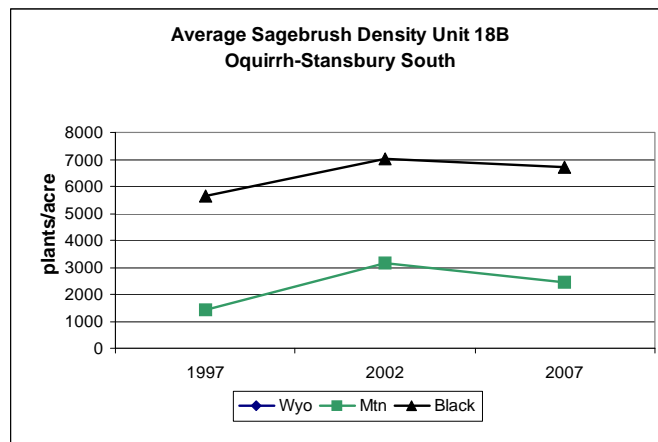


Figure 4. Average mountain big sagebrush and black sagebrush density for subunit 18B.

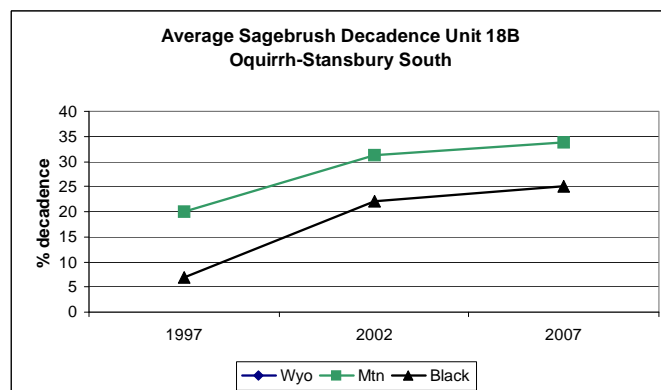


Figure 5. Average mountain big sagebrush and black sagebrush decadence for subunit 18B.

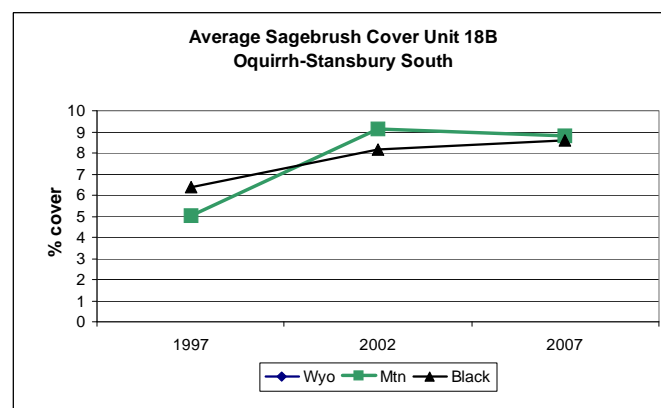


Figure 6. Average mountain big sagebrush and black sagebrush cover for subunit 18B.

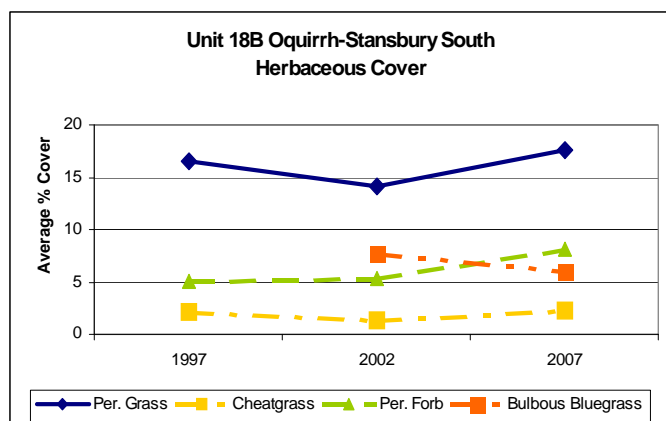


Figure 7. Average herbaceous cover for subunit 18B.

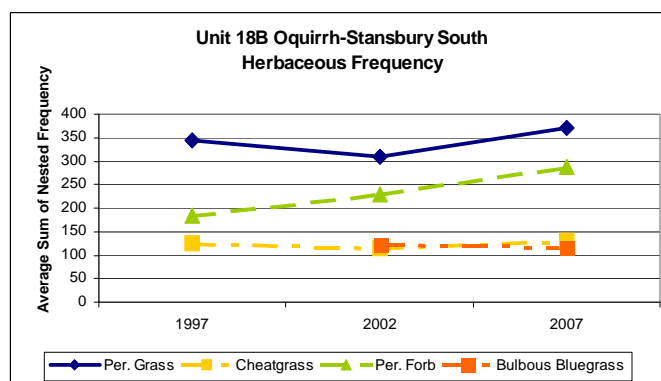


Figure 8. Average nested frequency for subunit 18B.

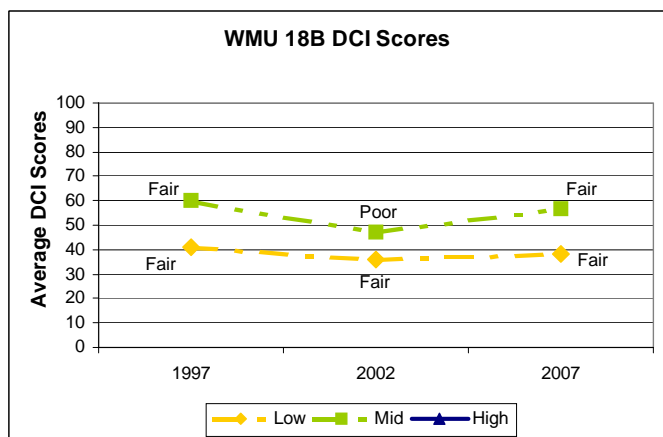


Figure 9. Subunit 18B average Desirable Components Index (DCI) scores by year. The DCI scores are divided into three categories based on ecological potentials, which include: low, mid-level, and high.